14:International Bank S-5 (1954) 1955 MD1 Syria MD1

288 about 14,000-16,000 tons. An estimated 14,000 workers are employed in the mechanical section, making the total, including the hand loom workers, 29,000.

Knitted garments, underwear, socks and stockings. This section of the textile trade has developed considerably in recent years. There are 264 enterprises engaged in the production of knitted garments. Some have only two or three machines; the larger factories are on the whole well built and designed for efficient production with the latest British, American and German machines. The use of rayon rather than cotton or woolen yarn has increased considerably, and they make use of substantial quantities of the imported rayon fiber and yarn. Three of the larger stocking factories concentrate on production of nylon stockings. About 2,500 workers are estimated to be employed in all the sections of the knitting industry, located mainly in the Damascus area. This part of Syria's textile industry is of rapidly growing importance from the point of view of exports.

Textile dyeing, printing and finishing. Many of the textile factories bleach or dye yarn or cloth on their own premises. There are also a number of firms engaged in bleaching, dyeing, finishing and block printing. These are situated mainly in Aleppo and employ a total of about 250 workers. In addition, there are many small enterprises throughout the country which bleach and dye yarn and cloth by traditional handicraft methods and for which no statistics are available.

A large dyeing and printing works, established at Homs in 1946, and unique in Syria, prints textiles by rotary machinery as well as by the block process. When the installation of additional machinery is completed the firm will employ about 400 workers on a three-shift basis.

Table 2 summarizes the scope of the textile industry.

289 *Vegetable Oils*

Syria has produced vegetable oil for many centuries, mainly from olives, and the traditional methods of crushing and pressing are still to be seen in some areas. The development of mechanical seed crushing and oil extraction in large factories began in Syria in 1945. About 70% of the output is now derived from cottonseed.

There are now seven large factories equipped in total with 48 Rosedown Maxoil expellers and six "French type" expellers to process the

14:International Bank S-5 (1954)1955 MD1 Syria MD1

domestic and imported raw material; four of these also have spirit extraction plants. In addition, there are 10 smaller factories with expellers, hydraulic presses or small spirit extraction plants. Most of the factories are situated in Aleppo, Damascus, Homs and Latakia.

During 1950-53 the average annual volume of cotton seed available for crushing, deducting export and sowing requirements, was about 68,000

TABLE 2 The Textile Industry

Type of enterprise	Number	Capital invested where known (million £S)	Spindles	Looms	Knitting machines	Estimated number of workers
Cotton and rayon spinning and weaving factories . .	6	32.7	90,000	1,400	—	6,000
Woolen spinning and weaving factories	3	2.3	900	40	—	160
Mechanical brocade-weaving factories	3	1.5	—	50	—	140
Small enterprises using mechanical looms	788	3.0	108	3,800	—	8,000
Small enterprises using hand looms	n.a.	n.a.	n.a.	6,000	—	10,000
Knitting industry	264	9.2	—	—	1,630	2,500
Textile printing and mechanical dyeing and finishing	15	6.5	—	—	—	650
Total	1,079	55.2	91,008	11,290	1,630	28,450

NOTE: Figures in some cases approximate estimates.

tons compared to 10,000 tons in 1947. Probably about 8,000 tons of refined cottonseed oil are now produced annually. This, added to oils from other seeds and nuts, imported[2] and indigenous, indicates a total annual production of about 10,000 tons of vegetable oil (exclusive of olive oil). When the additional equipment now in the process of being installed is in production, the total capacity of the factories will be in the region of 20,000 tons per annum.

Syria exported about 1,200 tons of cotton seed oil in 1953, 24,300 tons of oil cake and other residue from vegetable oil extraction, the highest

[2] Limited amounts of copra and palm seeds are imported.

14:International Bank S-5 (1954)1955 MD1 Syria MD1

figure yet recorded. Very little of the valuable by-products is used for feeding farm stock in Syria; the husks, which constitute about 35% of the weight of the seed, are disposed of mainly as boiler fuel.

In the areas near the olive groves there are about 750 animal or hand-operated mills and presses and about 200 either wholly or mainly mechanically operated. The annual production of olive oil has averaged 10,000 tons over the 10 years 1942 to 1951, five of which were poor seasons. Most of the production is locally consumed, forming an important component of the diet.

The seed crushing factories employ about 1,000 workers, and in the olive growing districts there are probably another 1,500-2,000 who work on the olive mills and presses for short periods each year.

Since August 1, 1952 there has been an embargo on the import of vegetable oils to protect the local market.

Soap

In the past the renowned Syrian soap industry was based entirely on olive oil; now there is a tendency to mix in cheaper oils and fatty acids. The industry has lost much ground both in the home and foreign markets due to the competition of occidental soaps and the failure of Syrian manufacturers to modernize their methods. Sir Alexander Gibb & Partners reported in 1947 that by degrees the small "cottage" installations were giving way to larger, though not necessarily modern, factories.

Today according to official figures eight of the 59 soap factories are considered modern; 600 workers are employed.

The total soap production in 1947 was under 4,000 tons. By 1953 it was estimated to have risen to between 8,000-9,000 tons, of which 1,900 tons were exported. Since August 17, 1952 importation of most types of soap has been prohibited.

Sugar Refining

Until the Sugar and Agricultural Products Company started production on a small scale in Homs in 1949, Syria imported all of its sugar requirements. growing only a small amount of cane locally. The company has tried to develop a beet crop that will provide most of domestic sugar requirements. In 1953, 51,500 tons of beet produced 7,058 tons of sugar.

14:International Bank S-5 (1954)1955 MD1 Syria MD1

An increase of about 60% in cotton production is expected by 1960, but present power capacity appears adequate to meet this expansion. 377 248

Glass

The Damascus glass factory owns a 600-KW power plant. The total productive capacity of the factory is about 43 tons of glass per day; in 1953 about 3,000 tons of glass were actually produced, representing about 70 days output at full capacity. If a consumption of about 100 KWH per ton of glass is assumed then the generated power in 1953 would have been about 0.3 million KWH. 377 323

Cold Storage

A cold storage plant in Damascus has a 500-KW power plant interconnected with the public utilities network. It can be assumed that about half of the approximately 2 million KWH required annually is supplied by the public utilities and half by the factory's plant. 377 254

Oil Mills

Two Aleppo oil mills have private power plants, the larger with a capacity of 1,200 KW, the smaller with 300 KW. These factories work only about 150 days per year (say six days per week during six months). With one-third of the capacity in reserve and an assumed load factor as low as 10% the power generated per year would be about 1.5 million KWH. 377 388

Flour Mill

A flour mill in Aleppo has a 400-KW plant. With a utilization of two-thirds of the capacity for 6,000 hours the power generated would be about 1.2 million KWH. 377 256

Sugar

In 1953 the Homs sugar factory processed 7,000 tons of sugar from beets and refined 22,000 tons from raw sugar. Power required for the former 377 257

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COTTON IN SYRIA

Table 26

SYRIA: Estimated Cost of Producing Cotton in the Upper Euphrates Valley on a Typical Tenant Cultivator Farm
1950

248

Cost Items	Cost per Acre
	Dollars
Land preparation and planting	10.86
Seed	2.67
Irrigation (fuel and amortization of engines and pumps)	10.09
Cultivation	6.22
Supervisor's salary	3.72
Harvesting	10.34
Miscellaneous	5.17
Total tenant's cost at plantation	50.47
Tenant's transportation cost to Aleppo	3.74
Tenant's ginning cost at $9 per bale	7.74
Tenant's cost for the ginned cotton from one acre	47.95
Estimated Yield per acre	616 pounds of lint cotton per acre
Rent at one-third of crop	205 " " " " " "
Tenant's share of lint	411 pounds
Estimated Yield per acre	1,144 pounds of seed
Rent at one-third of crop	381 " " "
Tenant's share of seed	763 " " "
Tenant's cost of ginned cotton	$47.95
Less credit for tenant's share of seed at $64 per ton	24.42
Tenant's net cost of ginned cotton	$43.53
Tenant's net cost of ginned cotton divided by pounds	or $\frac{43.53}{411}$ equals 10.59¢ net cost per pound

NOTE: This is a plantation with 250 acres of cotton grown under irrigation in the Upper Euphrates Valley. The landlord gets one-third of the seed cotton at the plantation for land rent. The tenant pays transportation and ginning cost only on his share of the production. [427]

SOURCE: Trade sources.

COTTONSEED OIL

388

Nine crushing mills have a total capacity for approximately 500,000 tons of seed annually. Only four of these are primarily cottonseed oil mills—two in Aleppo, one in Damascus, and one in Hama. Capacity is adequate and prices slightly higher than those in the foreign markets, so most of the seed is now crushed in Syria. However, the extraction rate is low, especially in the older mills, and 1951 cottonseed oil production was given as only 5,000 tons. This represents about 40 per cent of the total vegetable oil produced in the country, the remainder being largely olive oil. Approximately 85 per cent of the cottonseed oil cake is consumed domestically as stock feed, with the other 15 per cent exported.

INSECTS

The principal cotton destroying insects are the spiney bollworm, *Earias insulana* (Boisd.), and the locust. Last year the plant protection department of the Ministry of Agriculture distributed 250 tons of benzine hexachloride and farmers purchased 150 tons directly from dealers. Even so, yields were only half what they were reported to be the previous year and farmers at- 242 248